Page 21, paragraph 2, lines 11-18:

B10

Referring to Figure 20, in an alternative to the mounting of the silicon IC underneath the pyramid-shaped body of the sensor assembly shown in Figures 18 and 19, a silicon IC 202 is mounted adjacent to the body of sensor assembly 220. Figure 20 shows IC 202 mounted on the opposite side of the substrate 76 relative to the mounting of the pyramid-shaped body 70, while Figure 21 illustrates an IC 202 being mounted on the same side of substrate 76 as the pyramid-shaped body 70. In either case, the IC 202 in Figures 20 and 21 may be connected through direct electrical bonding as in Figure 18, or by wire bonding as in Figure 19.

IN THE CLAIMS:

Please delete Claims 24-28.

Please amend Claims 1-5, 17, 30, 31, and 33 as follows:

Please amend Claim 1 as follows:

B11

Sub C1

1. A sensor assembly for use in an elastomeric material, the assembly comprising:

a first pair (22, 24) of sensors disposed along a first pair of respective planes that intersect, said first sensors detecting a force in a first direction;

a second pair (30, 32) of sensors disposed along a second pair of respective planes that intersect, said second sensors detecting a force in a second direction; and

wherein the force measured in the first direction is equal to the difference between the outputs of said first sensors, and the force measured in the second direction is equal to the difference between the outputs of said second sensors.

Please amend Claim 2 as follows:

2. The sensor assembly of Claim 1, wherein the sum of the forces on said first sensors and said second sensors equals a force in a third direction

B11 conc.

Please amend Claim 3 as follows:

3. The sensor assembly of Claim 1, wherein said first pair of respective axes are generally oriented at a first angle with respect to the first direction.

Please amend Claim 4 as follows:

4. The sensor assembly of Claim 3, wherein said second pair of respective axes is generally oriented at a second angle with respect to the second direction.

Please amend Claim 5 as follows:

5. The sensor assembly of Claim 4, wherein said first and second angles are equal.

Please amend Claim 17 as follows:

B12

17. The sensor assembly of Claim 16, wherein said body is made of one polyamide, urethane and epoxy.

Please amend Claim 30 as follows:

B13 Sub C3

30. A process of embedding a sensor in an elastomeric material, the process comprising:

providing a three-axis sensor assembly including two pairs of strain gauges, a first pair disposed on first opposed faces of a pyramid-shaped body, and a second pair disposed on second opposed faces of the pyramid-shaped body; and

adjusting the aspect ratio of the pyramid-shaped body to a sensitivity of the three-axis sensor.

Please amend Claim 31 as follows:

31. The process of Claim 30, further including the step of adjusting the hardness of the pyramid-shaped body relative to the elastomeric material.

Please amend Claim 33 as follows:

B14

33. The process of Claim 30, further including the step of encapsulating the first and second pairs of strain gauges in a second material different than the elastomeric material.

Please add the following new claims:

B15

36. The process of Claim 35, further including the step of coupling the strain gauges to the body with an adhesive.

37. The process of Claim 36, further including the step of potting the sensor assembly in a third material.

38. The process of Claim 37, wherein the adhesive and the third material are the same.

39. The process of Claim 30, further including the step of placing a topping layer on the sensor assembly so as to scale strain forces sensed by the strain gauges.

40. The three-axis sensor assembly of Claim 10, wherein said first sensing element comprises a first pair of strain sensors, and said second sensing element comprises a second pair of strain sensors.

41. The three-axis sensor assembly of Claim 40, wherein said first sensing element is disposed on a first pair of generally opposed faces of a pyramid-shaped body, and said second sensing element is disposed on a second pair of generally opposed faces of the pyramid-shaped body.

42. The three-axis sensor assembly of Claim 41, wherein said first and second pairs of strain sensors are resistive strain sensors.

43. The three-axis sensor assembly of Claim 42, wherein said first and second sensing elements generate said first and second outputs differentially.

B15 cont.

44. The three-axis sensor assembly of Claim 43, wherein said first and second sensing elements are arranged in a Wheatstone bridge circuit to generate said first and second outputs.

Sub C4

45. A process of embedding a sensor in an elastomeric material, the process comprising:

providing a three-axis sensor assembly including first and second pairs of strain sensors, the first pair disposed on first opposed faces of a pyramid-shaped body, and the second pair disposed on second opposed faces of the pyramid-shaped body; and

placing the sensor assembly in the elastomeric material when the elastomeric material is in an uncured state.

46. The process of Claim 45, further comprising the step of adjusting the aspect ratio of the pyramid-shaped body according to a sensitivity of the sensor assembly.

47. The process of Claim 45, further comprising the step of encapsulating the first and second pairs of strain sensors.

48. The process of Claim 47, wherein said encapsulating step includes using a second material different than the elastomeric material.

49. The process of Claim 48, further comprising the step of selecting a ratio of elastic moduluses between the elastomeric material and the second material.

50. The process of Claim 49, wherein the second material is one of polyimide and epoxy.

51. The process of Claim 48, further including the step of coupling the strain sensors to the pyramid-shaped body with an adhesive.

52. The process of Claim 51, further including the step of potting the sensor assembly in a third material.

B15 Cont.

53. The process of Claim 52, wherein the elastomeric material, the second material, the third material and the adhesive are different.

54. The process of Claim 52, further including the step of placing a topping layer on the sensor assembly so as to scale strain forces sensed by the strain sensors.

55. The process of Claim 45, further comprising the step of adjusting the hardness of the pyramid-shaped body relative to the elastomeric material.

56. The process of Claim 45, further comprising the step of coupling the pyramid-shaped body to a printed circuit.

57. The process of Claim 56, wherein the printed circuit is flexible.

58. The process of Claim 56, wherein the printed circuit includes a substrate and said coupling step includes coupling the pyramid-shaped body to the substrate.

59. The process of Claim 58, wherein the substrate comprises a silicon IC.

60. The process of Claim 59, wherein the substrate further comprises one of a polyimide and an epoxy.

61. The process of Claim 60, further comprising the step of electrically coupling the strain sensors to the printed circuit.

62 The process of Claim 58, wherein the substrate includes generally planar top and bottom surfaces, and the pyramid-shaped body is coupled to the top surface.

63. The process of Claim 62, further comprising the step of disposing an integrated circuit on the bottom surface when the strain sensors are piezoelectric strain sensors.

64. The process of Claim 63, further comprising the step of electrically coupling the integrated circuit to the printed circuit.

B15 Conc.

65. The process of Claim 63, wherein the integrated circuit is displaced from the pyramid-shaped body.

66. The process of Claim 63, wherein the integrated circuit includes a buffer amplifier.

67. The process of Claim 45, further comprising the step of coupling the resistive strain sensors to the opposed faces with an adhesive.

68. The process of Claim 67, wherein the adhesive is an epoxy.

Sub C5

69. A three-axis sensor assembly embedded in an elastomeric material that measures strain forces on the elastomeric material, the sensor assembly comprising:

a three-axis sensor assembly including two pairs of strain sensors, a first pair disposed on first opposed faces of a pyramid-shaped body, and a second pair disposed on second opposed faces of the pyramid-shaped body;

a printed circuit responsive to the outputs of said strain sensors to generate a signal indicative of a strain force acting on the elastomeric material; and

wherein the sensor assembly is electrically coupled to the printed circuit.

70. The three-axis sensor assembly of Claim 69, wherein the strain sensors are resistive strain sensors.

REMARKS

Entry of the above amendments is respectfully requested. Each of the above amendments is being made to either clarify particular features of the preferred embodiment, or, in the case of the added claims, to more specifically define certain aspects of the preferred embodiment.

Each of the claims is believed to be allowable and early consideration of the present application is earnestly solicited. Should the Examiner have any questions, or